SOUTH AFRICAN JOURNAL OF SCIENCE

Volume 77

1981

INDEX

INDEX TO PARTS

No. 1 January	1 – 48
No. 2 February	49 – 96
No. 3 March	97 – 144
No. 4 April	145 – 192
No. 5 May	193 – 240
No. 6 June	241 – 288
No. 7 July	289 – 336
No. 8 August	337 – 384
No. 9 September	385 – 432
No. 10 October	433 – 480
No. 11 November	481 – 528
No. 12 December	529 – 576

Supplement to the South African Journal of Science, June 1982.

A

AARDE, R.J. VAN See VAN AARDE, R.J.
AARDT, W.J. VAN See VAN AARDT, W.J.
Absolute zero, Towards the: below 1K 298
Acetylcholinesterase and trypsin by some N-Methylpyridinium-substituted derivatives, Inhibition of 524
Acraea Horta L., Immediate and delayed effects of radiation on the genetic endowment of the butterfly 162
Activity monitoring device for small laboratory animals 176
ADAMS, P.A. 562
Agaricus Brunnescens and *Macrolepiota Zeyheri*, Nutrient content of 426
Agulhas Current and its palaeo-ecological implications, Evolution of the 547
Agulhas Current circulation from satellite remote sensing, Features ot the southern 231
ALBERTS, M., *et al.* 521
ALEXANDER, W.J.R. 53
Amaranthus Hybridus L, Effects of light and temperature on the germination on two subspecies of 84
Amino acids in an optimally balanced mixture of egg protein and synthetic amino acids, Effects of non-essential amino acid intake on the utilization of the essential 153
Anatomical Society of Southern Africa, Abstracts of papers presented at the XIth annual congress held at the University of the Western Cape, Bellville on 16 and 17 May 1980 90
Andat: an interactive, computerized manual for the chemical analysis of plants, soils and fresh waters 103
ANDERSON, R.B. 344
Angiosperms in Tertiary deposits of the South-western Cape Province, South Africa, A palynological record of 341
Animals in the Laboratory 151
Aphid transmission of three viruses causes Freestate streak disease 488
Apple juice and orange juice on rat molars *in vivo*, Erosive action of 423
Archaeological review 531
Archaeological survey of the Magalies Valley 310
Archaeology, (Calls for and from the past) 386
Archosaur ankles: interpretation of the evidence 307
AS, J.G. VAN *See* VAN AS, J.G.
AUSTIN, J.C. 151
Australopithecines, Trophic differences between "gracile" and "robust": a scanning electron microscope analysis of occlusal events 203
Australopithecus Africanus: its phyletic position reconsidered 445
AVERY, D.M. 265

B

Baboons, Effects of varied dietary calcium, phosphorus and vitamin D contents on mineral and bone metabolism in: a preliminary report 136
Bacteria, Real benefits from the genetic manipulation of 14
Bacteriophage specific for plasmids of the Inc F group, Physical and biological properties of a newly isolated 371
BAIRD, D., *et al.* 420
BAKKER Sr., E.M. VAN ZINDEREN *See* VAN ZINDEREN BAKKER, E.M. Sr.
BALINSKY, B.I. 162
BARTLETT, P.D., *et al* 193
BATE, G.C. *et al.* 103
BAXTER, R.M. *and* DAVIS, A.R. 177
Benguela region, Upwelling in the southern 99
BERJAK, P. 148
BERJAK, P. *and* LAMB, J.M. 120
BERTRAM, B.C.R. *and* BURGER, A.E. 188
BIAGIO, R., *et al.* 39
Biogenic (cyanobacterial) carbonate sediments from a sinkhole lake in the Western Transvaal, South Africa, Unusual occurrence of 564
Biomedical research 18
Biomedical research in South Africa 111
Bird populations in South Africa, Assessing 147
BLABER, S.J.M. 305
BLUMENBERG, B., *et al.* 168
BOHM, L. 54, 394
Boro River, Okavango Delta, Botswana, Reassessment of plant succession on spoil heaps along the 21
BOTHA, F.C. *and* GROBBELAAR, N. 79
Bothriocephalus (Cestoda: Pseudophyllidea) in the Transvaal, Further records of the occurrence of 343
BOW, P. 150
BOYD, C.O. 57
BRADLEY D.W, *et al.* 314
BRADLEY, J.D. *and* GERRANS, G.C. 495
BRADSHAW, E., *et al.* 471
BRAIN, C.K. 104
BRAIN, P. 12
BRAND, S.S. 6
BRANDT, F. DE W., *et al.* 343
Broederstroom 24/73, Transvaal, South Africa, Early Iron Age settlement at 401
3-Bromo-2-hydroxy-5-methylacetophenone, its oxime and hydrazone, Stepwise stability constants of some bivalent metal ion complexes with 237
BROWN, A.J.V. 416
BROWN, N.A.C. *and* DEALL, G.B. 175
BROWN, N.A.C. *and* FORSYTH, C. 239
BRUYN, D.B. DU *See* DU BRUYN, D.B.
Building houses requires more action, less theory 290
Bulinus (*Physopsis*) *globosus*, Evidence for non-assimilation of *Chlorella* by the African freshwater snail 319
BURGER, A.E. *and* BERTRAM, B.C.R. 188
BURGER, A.P. 8
Bushbabies to the hepatitis A virus, Response of *Galago* 314
Butterfly, *Acraea horta* L., Immediate and delayed effects of radiation on the genetic endowment of the 162

C

Calcium, phosphorus and vitamin D contents on mineral and bone metabolism in baboons, Effects of varied dietary: a preliminary report 136
Callus and proteoid rootlet formation on cotyledonary explants of *Protea neriifolia* 493
CAMDEN-SMITH, P. *et al.* 379
CAMPBELL, P.L., *et al.* 84
Cancer, Fallacies and distortions in the epidemiology of: Peto versus Epstein and Swartz 108
Cancer patterns in Transkei 555
Cape Peninsula, Towards an understanding of the effects of orography on the distribution of precipitation over the 295
Carbon dioxide absorption by *Osteospermum sinuatum* and *Ehrharta calycina* at different stages of development, Effect of cutting on 273
Carbon dioxide in the air of Transvaal karst caves 312
Carbonate sediments from a sinkhole lake in the Western Transvaal, South Africa, Unusual occurrence of biogenic (cyanobacterial) 564
Carpenter bee, The flight of the 152
CARTE, A.E. 344, 346
CASS, A., *et al.* 24, 323
Cat populations of Cape Town and Pretoria, South Africa, Frequencies of mutant alleles in the 168
Cell cycle 1981: one or more limit cycle oscillations? 541
Cellular oscillations: relative independence of enzyme activity rhythms and periodic variations in the amount of extractable protein 66
Cephalochordate (A fossil) from the early Permian Whitehill Formation of South Africa 178
Cephalopod beak identification 291
Chacma baboon (*Papio ursinus*). Melatonin rhythm and the effect of pinealectomy and superior cervical ganglionectomy on the rhythm 39

Chemical analysis of plants, soils and fresh waters, ANDAT: an interactive, computerized manual for the 103
Chemical education, National symposium on 64
Chemistry, Managing a first year course in: a three-pronged approach to changing circumstances 495
Chinese became read, How 146
Chlorella by the African freshwater snail *Bulinus* (*Physopsis*) *Globosus*, Evidence for non-assimilation of 319
CHOVEAUX, N.A., *et al.* 493
Chromatin, The emerging structure of 54
Ciskei, The science education project in the 353
Climatic change and hominid evolution.................. 104
Climatic changes, Future 437
Coal seam near Durban, Mode of origin of a Middle Ecca .. 514
COCKCROFT, V.G. *and* FORBES, A.T. 41
COETZEE, J.A. 341
COETZEE, J.C., *et al.* 426
Computerized manual for the chemical analysis of plants, soils and fresh waters, ANDAT: an interactive.......... 103
COOKS, J. 517
COOPER, M.R. 308
Copepoda, International research on.................... 533
Cotton fruit development and abscession: the role of gibberellin-like components 363
COUSENS, D.W.H. 345
Cranium from Yunnan Province, South China, A new higher primate 106
CREWE, R.M., *et al.* 200
CRUICKSHANK, A.R.I. 307
Cucurbitaceae, Germination inhibitors in the fruits of some indigenous species of the 79
Cut carnations, Effect of silver thiosulphate preservative on the physiology of III, regulation of (^{14}C) sucrose transport and utilization 320

D

DARLINGTON, C.D................................ 195
DAVEY, J.E., *et al.* 84, 493
DAVIES, R.D. 292
DAVIS, A.R. *and* BAXTER, R.M. 176
DAVIS, J.S. 499
DEACON, H.J. 531
DEALL, G.B. *and* BROWN, N.A.C. 175
DEAN, J.F. 18
DE JAGER, J.M., *et al.* 24, 323
DE KLERK, W.A., *et al.* 136
DE KOCK, M.J. *and* YOUNG, J.L. 371
DEMANET, C.M. 249, 441
Dental care (Primary) and the national health 150
Dental services 146
Depression, Investigation of two animal models of........ 180
Desert ostrich exhales unsaturated air 569
Development goals in South Africa 6
Development, Research for: what needs to be done........ 2
DE VILLIERS, H. 415
DE VILLIERS, J.P.................................. 347
DE VILLIERS, O.T. *and* WATTS, J.E. 428
DE VILLIERS, O.T., *et al.* 273, 276
Dewpoint technique, Calibration of thermocouple hygrometers using the.................................. 323
DIAB, R.D. 126
Diatomaceous earth ("Nature's bug-killer" doesn't)........ 352
DIX, D.L., *et al.* 140
Dobzhansky, 1900 - 1975, Memories of Theodosius........ 538
DODD, M.C. *and* VAN STADEN, J. 171
Dormancy and germination of the Manketti nut *Ricinodendron Rautanenii* Schinz 262
DREYER, J.J. 356
DREYER, J.J. *and* VAN DER WALT, W.H............. 153
DU BRUYN, D.B. *et al.* 136
DUCASSE, P.B. *and* VAN STADEN, J................. 320
Dunes of the Namib desert, Aspects of the morphometry of linear 366
DU TOIT, P.S....................................... 346

E

EAGLE, G.A., *et al.* 183
Early Iron Age settlement at Broederstroom 24/73, Transvaal, South Africa 401
Ecca rocks near Prince Albert, South Africa, Reptilian fauna from 425
Ecology finds another home........................... 98
Ecology (Fire) in South Africa: a visitor's impressions...... 62
Education, A new formula for.......................... 482
Education (Science) in a society of mixed cultures 197
Egg protein and synthetic amino acids, Effects of non-essential amino acid intake on the utilization of the essential amino acids in an optimally balanced mixture of...... 153
Ehrharta Calycina at different stages of development, Effect of cutting on carbon dioxide absorption by *Osteospermum sinuatum* and 273
EICKER, A., *et al.* 426
Electron microscopists display their usual versatility 148
ELLER, B.M., *et al.* 422
ENGELBRECHT, G.H.C., *et al.* 511
Engineering scientists, Registration of 112
Entomological Society of Southern Africa, third congress held at Pretoria, 16 to 18 September 1980 200
Environmental processes, Modelling complex 53
Epidemiology of cancer, Fallacies and distrotions in the: Peto versus Epstein and Swartz 108
ERASMUS, B.J., *et al.* 168
ERASMUS, D.A. 295
ERASMUS, T. *and* VAN DER HORST, G. 73
Escherichia coli, Inadequacy as an indicator of water pollution in a tropical climate: a preliminary study in Botswana 44
Estuarine fishes in south-east Africa, The zoogeographical affinities of 305
Eukaryotic chromatin: structural distinctions in active genes 394
Eunotosaurus Africanus Seeley, First complete skull of the Permian reptile 417
Evidence, The same - why different conclusions 534
Evolution, African evidence for 434

F

Fabrosauridae (Reptilia, Ornithischia) and the *Lesothosaurus* myth, Taxonomy of the............................. 43
Fabry-Perot interferometry, Study of Hα emission from solar limb prominences using 81
FEAST, M.W. 340
FELLINGHAM, S.A. *and* ROSE, E.F. 555
Fire ecology in South Africa: a visitor's impressions 62
First year course in chemistry, Managing a: a three-pronged approach to changing circumstances.................. 495
Fish blood, Osmotic fragility curves of, recorded using glass, polycarbonate and siliconized ware.................... 277
Fishing industry, Advice to the 242
FitzSimons, V.F.M. 294
Flight of the carpenter bee 152
Fluvial systems, Modern and ancient.................... 483
FORBES, A.T. *and* COCKCROFT, V.G. 41
FORD, P.J. 244, 298
FORSYTH, C. *and* BROWN, N.A.C. 239
Freestate streak disease, Aphid transmission of three viruses causes 488
FRICKE, A.H., *et al.* 183
FROST, P.G.H. 501
FULLER, A.O., *et al.* 379

G

Galactic and extragalactic distance indicators, Properties of Mira variables and their use as........................ 340
GALASKO, G.T.F. 532
Galaxies, Neutral hydrogen in.......................... 18
GAMBLE, F.M. 312
GEAR, J.H.S. 52

General relativity, A semi-classical variational principle for the equations of planetary motion in 325

Genetic endowment of the butterfly, *Acraea horta* L., Immediate and delayed effects of..................... 162
Genetic manipulation of bacteria, Real benefits from the.... 14
Geological succession at Langebaanweg, Cape Province, and global events of the late Tertiary..................... 33
Germination and viability studies on the seeds of *Podocarpus henkelii* Stapf. 171
Germination in *Protea magnifica* Link, Seed 175
Germination inhibitors in the fruits of some indigenous species of the Cucurbitaceae.......................... 79
Germination of two subspecies of *Amaranthus hybridus* L., Effects of light and temperature on the 84
Germination using achenes of *Bidens pilosa* L. (Blackjack), Demonstration of the reversible photoreaction controlling 239
GERRANS, G.C. *and* BRADLEY, J.D. 495
Gibberellin-like components, Role of in cotton fruit development and abscission 363
GILBERT, D.A. 111, 541
GILBERT, D.A. *and* TSILIMIGRAS, C.W.A............ 66
GILL, A.M. 62
GILLILAND, M.G., *et al.* 140, 493
GLASSMAN, R.M., *et al.* 423
Golden Delicious apple leaves, Biosynthesis of sorbitol and other compounds in 276
GOW, C.E. 43, 564
GOW, C.E. *and* KEYSER, A.W. 417
GRABOW, W.O.K., *et al.* 314
GRANEY, D.B., *et al.*............................... 28
GRANT, R.F., *et al.* 398
GREENWOOD, P.J., *et al.* 183
GRIFFITHS, C.L. 99
GRINDLEY, J.R. 533
GRINE, F.. 434
GRINE, F.E. 203
GRINE, F.E. *and* HENDEY, Q.B. 374
GROBBELAAR, N. *and* BOTHA, F.C. 79
GROBBELAAR, N., *et al.*........................... 422
GUTTERIDGE, C.S., *et al.* 521

H

Hx emission from solar limb prominences using Fabry-Perot interferometry, Study of 81
HALL, K. 129
HALL, K.J. 86
HANRAHAN, S.A. 149
HARINGTON, J.S...................................... 108
HARINGTON, J.S., *et al.* 471
HARPUR, D.P. 473
HATTINGH, J. *and* SMIT, G.L. 277
HELD, G. 345
HENDEY, Q.B. 33
HENDEY, Q.B. *and* GRINE, F.E. 374
HENNIG, H. F-K.O., *et al.* 183
Hepatitis A virus, Response of *Galago* bushbabies to the .. 314
HEWSON, M.G. 197
HEWSON, P.W. 16
HICKMAN, R. VAN HOORN- *See* VAN HOORN-HICKMAN, R. ....
High intensity storms, Correction to siphon rain-gauge records of 369
Holocene micromammalian faunas from the northern Cape Province, South Africa 265
Hominid evolution and climatic change 104
HOORN-HICKMAN, R. VAN *See* VAN HOORN-HICKMAN, R. ....
HOPKINS, A., *et al.* 524
HORST, G. VAN DER *See* VAN DER HORST, G. ....
HOUMOLLER, J.M., *et al.* 310
Houses, Building requires more action, less theory 290
Humidity and temperature in a Southern African mangrove swamp 41
HUNTER, I.T. 376
HUTTON, M.J. *and* VAN STADEN, J. 476
Hydraulic press, thermocouple psychrometer, and pressure chamber for the measurement of total and osmotic leaf water potential in soybeans, Comparison of............ 398
Hydrogen (Neutral) in galaxies 18

I

Insulin action, Toward an understanding of............. 532
Invertebraatstudie onder soeklig 107
ISDALE, J.M. *et al.* 136
Isokinetic temperatures, The thermodynamic compensation law and the origin of anomalous...................... 562
Isolation procedures on the ultrastructure, function and yield of rat heart mitochondria, Analysis of the effects of different 28

J

JAARSVELD, H. VAN *See* VAN JAARSVELD, H.......
Jackass penguins, Speed of movement over long distances and their possible use of ocean currents................ 420
JAGER, J.M. DE *See* DE JAGER, J.M. ....
JARRETT, A.H., *et al.* 81
JOHANSON, D.C., *et al.* 445
JOHNSON, D.N....................................... 147
JOUBERT, J.G.V., *et al.* 273
JOUBERT, W.S., *et al.* 39

K

Karst caves, Carbon dioxide in the air of Transvaal........ 312
KATZ, W., *et al.* 132
KEEGAN, A.B. *and* VAN STADEN, J. 262, 387
KEETCH, D.P., *et al.* 200
KEOGH, H.J. *and* PRICE, P.J. 484
KERAAN, M.M., *et al.* 511
KEYSER, A.W. *and* GOW, C.E. 417
KIMBEL, H.W., *et al.* 445
King's beach, Port Elizabeth: Nursery grounds of juvenile teleosts: evidence from the surf zone of............... 388
KLERK, W.A. DE *See* DE KLERK, W.A. ....
KOCK, M.J. DE *See* DE KOCK, M.J. ....

L

Laboratory animals, An activity monitoring device for small 176
Lactate dehydrogenase, N-substituted oxamates as inhibitors of 566
LAL, K. *and* MALHOTRA, S.R. 237
LAMB, J.M. *and* BERJAK, P. 120
LANCASTER, N. 366
Land breeze circulation of the Natal coast, On the........ 376
Landform development, Rock quality measured by seismic wave velocity as a factor in 517
Langebaanweg, Cape Province, Geological succession and global events of the late Tertiary...................... 33
LASIAK, T.A. 388
LATEGAN, A.H., *et al.* 81
LEA, J.D., *et al.* 398
Leaf water potential in soybeans, Comparison of hydraulic press, thermocouple psychrometer, and pressure chamber for the measurement of total and osmotic 398
Lesothosaurus myth, Taxonomy of the Fabrosauridae (Reptilia, Ornithischia) and the 43

LEVINE, L.S., *et al.* 391
Light and temperature on the germination of two subspecies of *Amaranthus hybridus* L., Effects of 84
Liver cancer compared to that of oesophageal cancer in goldminers from Transkei, 1964 - 1979, Spatial pattern of primary 471
Liza dumerili (Steindachner, 1869), Spawning time and spawning grounds of mullet with special reference to.......... 73
LOCHNER, A., *et al.* 28
LOOCK, J.C. *and* OELOFSEN, B.W. 178
LOURENS, G.J., *et al.* 566
LOUW, G.N., *et al.* 566
Low temperatures, Towards the absolute zero: the early history of 244
LUBKE, R.A., *et al.* 21
LUTJEHARMS. J.R.E. 231

M

McDONALD, D.J., *et al.* 493
MACDONALD, I.A.W. 349
MACDONALD, M.A. *and* ROGAN, J.M. 353
McGEE, O.S. *and* SAVAGE, M.J. 369
McGILLIVRAY, G. 64
McGLASHAN, N.D. 51
McGLASHAN, N.D., *et al.* 471
Macrolepiota zeyheri and *Agaricus brunnescens*, Nutrient content of 426
Magalies Valley, Archaeological survey of the............ 310
Malakologiese kongres, Sewende internasionale 202
MALHOTRA, S.R. *and* LAL, K. 237
Mangrove swamp, Temperature and humidity in a Southern African 41
Manketti nut *Ricinodendron rautanenii Schinz*, Dormancy and germination of the............................. 262
Marama bean, *Tylosema esculentum*, a plant worthy of cultivation 387
MARIE, P., *et al*.. 136
Marion Island, Observations on the stone-banked lobes of.. 129
Marion Island, Quantitative analysis of till lithology on.... 86
MARKHAM, R. 345
MARTIN, A.K. 547
MARTINDALE, C.B. *and* NEWLANDS, G. 352
MASON, J.H. 355
MASON, R.J. 401
MASON, R.J., *et al*.................................. 310
MAYNARD, J.E., *et al*. 314
Measurement of water potential using thermocouple hygrometers 24
Medical services in South Africa: a question of equity...... 51
MEESTER, W. 294
Melatonin rhythm in the Chacma baboon (Papio ursinus) and the effect of pinealectomy and superior cervical ganglionectomy on the rhythm 39
MENACHE, A. 152
Metabolism in baboons, Effects of varied dietary calcium, phosphorus and vitamin D contents on mineral and bone: a preliminary report 136
Metal ion complexes with 3-bromo-2-hydroxy-5-methylacetophenone, its oxime and hydrazone, Stepwise stability constants of some bivalent 237
Metals on the development of oyster embryos, Effects of.... 134
MEYER, A.C., *et al.* 39
MEYER, B.J., *et al.* 39
MEYERS, O.L., *et al*. 511
Mice, Multimamate: a review 484
Micromammalian faunas (Holocene) from the northern Cape Province, South Africa............................ 265
Middle Ecca coal seam near Durban, Mode of origin of a .. 514
Mira variables, Properties and their use as galactic and extra-Mgalactic distance indicators 340
ITCHELL, G. 18
Mitochondria, Analysis of the effects of different isolation procedures on the ultrastructure, function and yield of rat heart 28
Modelling complex environmental processes 53
MOODLEY, G., *et al.* 136
Motion of a wheel on a rail 57
Mullet, Spawning time and spawning grounds of, with special reference to *Liza dumerili* (Steindachner, 1869) .. 73
Multimammate mice: a review 484
Mutant alleles in the cat populations of Cape Town and Pretoria, South Africa, Frequencies of 168
Mycobacterium bovis, strain BCG, Isolation and characterization of two heat stable polypeptides from............ 473
Myosin filament self-assembly: a new model for supramolecular structure generation........................ 499

N

NAIDU, S.G., *et al.* 423
Namib, Ancient climates and the age of the 435
Namib desert, Aspects of the morphometry of linear dunes of the 366
Natal coast, On the land breeze circulation of the.......... 376
National health, Primary dental care and the.............. 150
Navorsing en ontwikkeling in die R.S.A.: stand, neigings, knelpunte en prioriteitsriglyne........................ 8
NEITZ, A.W.H., *et al.* 524
Neutral hydrogen in galaxies 18
NEWLANDS, G. *and* MARTINDALE, C.B. 352
NICOLSON, S. 152
N-methylpyridinium-substituted derivatives, Inhibition of acetylcholinesterase and trypsin by some 524
Nobel prizes for 1980.............................. 12
N-substituted oxamates as inhibitors of lactate dehydrogenase 566

O

Occlusal events, A scanning electron microscope analysis of: Trophic differences between "gracile" and "robust" australopithecines 203
OELOFSEN, B.W. *and* LOOCK, J.C. 178
OELOFSEN, B.W. *and* RUBIDGE, B.S. 425
Oesophageal cancer in goldminers from Transkei, 1964-1979, Spactial pattern of primary liver cancer compares to that of 471
Okavango Delta, Botswana, Reassessment of plant succession on spoil heaps along the Boro River 21
OLIVIER, H.J. 112
Ontwikkeling en navorsing in die R.S.A.: stand, neigings, knelpunte en prioriteitsriglyne 8
Ontwikkelingdoelwitte in Suid-Afrika 6
OOSTHUIZEN, M.M., *et al.* 103
Orange juice and apple juice on rat molars *in vivo*, Erosive action of... 423
Ornithology, Present directions and future prospects in Southern African 501
Orography, Effects of on the distribution of precipitation over the Cape Peninsula, Towards an understanding of.. 295
ORREN, M.J., *et al*. 183
Osmotic fragility curves of fish blood recorded using glass, polycarbonate and siliconized ware.................... 277
Osteospermum sinuatum and *Ehrharta calycina* at different stages of development, Effect of cutting on carbon dioxide absorption by 273
Ostrich (Desert) exhales unsaturated air 569
Ostrich eggs in artificial incubators: could their hatching success be improved? 188
Oyster embryos, Effects of metals on the development of.... 134

P

Packham's Truimph pear trees, Metabolism of 2, 4, 5-TP in 428
Palynological record of very primitive angiosperms in Tertiary deposits of the South-western Cape Province, South Africa 341
Parasitological Society of Southern Africa. Abstracts of papers presented at the annual scientific meeting held at Onderstepoort on 7 and 8 July 1981 571
PATERSON, H.E.H. 113, 195
PATERSON, H.E.H., *et al.* 200
PELLATT, A., *et al.* 391
Percy FitzPatrick Institute of African Ornithology 500
Permian Whitehill Formation of South Africa, A fossil cephalochordate from the early 178
PETTIFOR, J.M., *et al.* 136
Phosphorus, calcium and vitamin D contents on mineral and bone metabolism in baboons, Effects of varied dietary: a preliminary report 136
Photoreaction controlling germination using achenes *Bidens pilosa* L. (Blackjack), Demonstration of the reversible 239
Physics for the few and for the many 16
Pinealectomy and superior cervical ganglionectomy on the rhythm, Melatonin rhythm in the Chahma baboon (*Papio ursinus*) and the effect of 39
PITCHFORD, R.J. 252
Planetary motion in general relativity, A semi-classical variational principle for the equations of 325
Plant succession on spoil heaps along the Boro River, Okavango Delta, Botswana, Reassessment of 21
Plasmids of the Inc F group, Physical and biological properties of a newly isolated bacteriophage specific for 371
PLATO in South Africa 497
Podocarpus henkelii Stapf., Germination and viability studies on the seeds of 171
Pollution surveys (Preliminary) around the South-Western Cape coast. Part 4: Salt River mouth, Table Bay 183
Polypeptides from *Mycobacterium bovis*, strain BCG, Isolation and characterization of two heat stable 473
Portosystemic diversion in the rat - comparison of four experimental models 511
POTGIETER, B. *and* SKENE, D.J. 180
POTGIETER, D.J.J., *et al.* 524, 566
Power from wind, Estimating 126
Precipitation over the Cape Peninsula, Towards an understanding of the effects of orography on the distribution of 295
Pressure chamber, hydraulic press, and thermocouple psychrometer for the measurement of total and osmotic leaf water potential in soybeans, Comparison of 398
PRETORIUS, S.J. 202
PRICE, P.J. *and* KEOGH, H.J. 484
Primate cranium from Yunnan Province, South China, A new higher 106
Primate remains from South Africa, Earliest 374
Protea magnifica Link, Seed germination in 175
Protea neriifolia, Callus and proteoid rootlet formation on cotyledonary explants of 493
Protea neriifolia seed, Long-term storage of 140
Proteaceae, Tissue culture of South African. I. 493
Protein, Cellular oscillations: relative independence of enzyme activity rhythms and periodic variations in the amount of extractable 66
Protein evaluation trials with young rats, Estimates of energy required for optimal protein utilization in 356
Proteoid rootlet and callus formation on cotyledonary explants of *Protea neriifolia* 493
PROZESKY, O.W., *et al.* 314
Pyrolysis gas-liquid chromatography of *Salmonella typhi* .. 521

Q

QUICKE, G.V. 17

R

Radiation on the genetic endowment of the butterfly, *Acraea horta* L., Immediate and delayed effects of 162
RANDALL, B.M., *et al.* 420
RANDALL, R.M., *et al.* 420
Rat heart mitochondria, Analysis of the effects of different isolation procedures on the ultrastructure, function and yield of 28
Rat molars *in vivo*, Erosive action of apple juice and orange juice on 423
Rat, Portosystemic diversion in the - comparison of four experimental models 511
Rats, Estimates of energy required for optimal protein utilization in protein evoluation trials with young 356
RAWDON, B.B. 149
RAYNHAM, G.L., *et al.* 21
REAVELL, P.E., *et al.* 21
REINECKE, A.J. 107
Reptilian fauna from Ecca rocks near Prince Albert, South Africa 425
Research and development projects, Some requirements for success with small 347
Research and development: what needs to be done 2
Ricinodendron rautanenii Schinz, Dormancy and germination of the Manketti nut 262
ROBBINS, D.J., *et al.* 136
Rock quality measured by seismic wave velocity as a factor in landforms development 517
RODGERS, J.P. 363
ROELEVELD, M.A. *and* SMALE, M.J. 291
ROGAN, J.M. *and* MACDONALD, M.A. 353
Root cap of *Zea mays* L., A unifying view of vacuolar ontogeny from studies on the 120
ROOYEN, M.W. VAN *See* VAN ROOYEN, M.W. .....
ROSE, E.F. *and* FELLINGHAM, S.A. 555
ROSS, F.P., *et al.* 136
ROUX, S., *et al.* 39
RUBIDGE, B.S. *and* OELOFSEN, B.W. 425
RYBICKE, E.P. *and* VON WECHMAR, M.B. 488

S

Salmonella typhi, Pyrolysis gas-liquid chromatography of .. 521
Salt River mouth, Table Bay. Preliminary pollution surveys around the South-western Cape coast. Part 4 183
SANAN, D.A., *et al.* 28
Sarcocystosis in domestic animals and man 56
Satellite remote sensing, Features of the southern Agulhas Current circulation from 231
Saturn and beyond 338
Saturn, Close encounters with the ringed planet 15
SAVAGE, M.J. *abd* McGEE, O.S. 369
SAVAGE, M.J., *et al.* 24, 323, 398
Schistosome distribution in South Africa, Temperature and 252
SCHOEMAN, M.J. 440
SCHOONBEE, H.J., *et al.* 343
Science education in a society of mixed cultures 197
Science education project in the Ciskei 353
Science, International indicators in 530
Sediments from a sinkhole lake in the Western Transvaal, South Africa, Unusual occurrence of biogenic (cyanabacterial) carbonate 564
Seed germination in *Protea magnifica* Link 175
Seed, Long-term storage of *Protea neriifolia* 140
Seed of *Podocarpus henkelii* Stapf, Germination and viability studies on the 171
Seismic wave velocity as a factor in landform development, Rock quality measured by 517
Shales from the Witwatersrand supergroup, Geochemical signature of 379
SIEGFRIED, W.R., *et al.* 566

Silver thiosulphate preservative, Effect of on the physiology of cut carnations. III, regulation of [^{14}C] sucrose transport and utilization 320
Siphon rain-gauge records of high intensity storms, Correction to 369
SKENE, D.J. *and* POTGIETER, B. 180
Skull of the Permian reptile *Eunotosaurus africanus* Seeley, First complete 417
SLY, M.R., *et al.* 136
SMALE, M.J. *and* ROELEVELD, M.A. 291
Smallpox vaccine, Some modifications in the preparation of 132
SMIT, G.L. *and* HATTINGH, J. 277
SMITH, L.S., *et al.* 132
SMITH, P. CAMDEN- *See* CAMDEN-SMITH, P. ......
SMITH, R. TAVERNER - *See* TAVERNER-SMITH, R...
SMITH, V.R., *et al.* 103
Snail *Bulinus* (*Physopsis*) *globosus*, Evidence for non-assimilation of *Chlorella* by the African freshwater............ 319
Solar limb prominences, Study of Hα emission from using Fabry-Perot interferometry.......................... 81
SOMERVILLE, P.C., *et al.*................................ 521
Sorbitol and other compounds in Golden Delicious apple leaves, Biosynthesis of 276
South African Association of Botanists, Abstracts of papers presented at the 7th annual congress held at the University of Port Elizabeth, January 1981 362
South African Biochemical Society Annual Congress, 5th, 1980 17
South African Pharmacological Society. Abstracts of papers presented at the annual congress held in Port Elizabeth on 16 and 17 October 1980.............................. 279
Southern African ornithology, Present directions and future prospects in.................................... 501
Spawning time and spawning grounds of mullet with special reference to *Liza dumerili* (Steindachner, 1869).......... 73
Speciation, The continuing search for the unknown and unknowable: a critique of contemporary ideas on........ 113
SPRAGUE, A.R.G., *et al.* 379
SPUY, E. VAN DER *See* VAN DER SPUY, E. ....
STADEN, J. VAN *See* VAN STADEN, J. ....
Stainless steel research in the Department of Metallurgy, University of the Witwatersrand...................... 292
STAPELBERG, J., *et al*.............................. 81
STEEL, R., *et al.* 310
STEENKAMP, J., *et al*.................................. 276
Stone-banked lobes of Marion Island, Observations on the.. 129

T

Tapinathus oleifoluis (Wendl.) Danser., Effect of the host species on the succulence of.......................... 422
TAVERNER-SMITH, R.................................... 514
Teaching, Limits to 194
Technology, Inappropriate?............................ 50
Teleosts, Nursery ground of juvenile: evidence from the surf zone of King's beach Port Elizabeth 388
Temperature and humidity in a Southern African mangrove swamp 41
Temperature and light on the germination of two subspecies of *Amaranthus hybridus* L., Effects of 84
Temperature and schistosome distribution in South Africa.. 252
TERBLANCHE, J., *et al*.............................. 511
TERBLANCHE, J.H., *et al.* 276
Tertiary (late), Geological succession at Langebaanweg, Cape Province, and global events of the............... 33
Theiler, Sir Arnold.................................... 355
Theodosius Dobzhansky, 1900 - 1975, Memories of........ 538
Thermocouple hygrometers, Calibration of using the dew-point technique 323
Thermocouple hygrometers, Measurement of water potential using 24
Thermocouple psychrometer, hydraulic press, and pressure chamber for the measurement of total and osmotic leaf water potential in soybeans, Comparison of 398
Thermodynamic compensation law and the origin of anomalous isokinetic temperatures.......................... 562
THOMSON, J.A.................................... 13, 44
Thunderstorm and related research, Symposium on 344
Thyroid gland, Yawning and the........................ 391
Till lithology on Marion Island, Quantitative analysis of.... 86
Tissue culture of South African Proteaceae I.............. 493
TOBIAS, P.V. 106, 538
TOUYZ, L.Z.G., *et al*................................ 423
2, 4, 5-TP, Metabolism of in Packham's Triumph pear trees 428
Transkei, Cancer patterns in............................ 555
TROLLIP, S.................................... 497
Trypsin by some N-methylpyridinium-substituted derivatives Inhibition of acetylcholinesterase and.................. 524
TSILIMIGRAS, C.W.A.................................. 100
TSILIMIGRAS, C.W.A. *and* GILBERT, D.A............. 66
Tumour promoting agents 100
TURNER, B.................................... 483
Tylosema esculentum, Marama bean, a plant worthy of cultivation 387

U

University of the Witwatersrand, Stainless steel research in the Department of Metallurgy........................ 292

V

Vacuolar ontogeny from studies on the root cap of *Zea mays* L., A unifying view of 120
VAN AARDE, R.J., *et al.* 168
VAN AARDT, W.J. *and* WOLMARANS, C.T......... 319
VAN AS, J.G., *et al*.................................. 343
VAN DER HORST, G. *and* ERASMUS, T. 73
VAN DER SPUY, E. 12
VAN DER WALT, W.H. *and* DREYER, J.J. 153
VAN DER WESTHUIZEN, F.G.T., *et al.* 273
VAN HOORN-HICKMAN, R., *et al.* 511
VAN JAARSVELD, H., *et al*.......................... 28
VAN REENEN, J.F. 415
VAN ROOYEN, M.W., *et al*.......................... 422
VAN STADEN, J. *and* DODD, M.C. 171
VAN STADEN, J. *and* DUCASSE, P.B. 320
VAN STADEN, J. *and* HUTTON, M.J................ 476
VAN STADEN, J. *and* KEEGAN, A.B. 262, 387
VAN STADEN, J., *et al*........................ 84, 140, 493
VAN WYK, C.B.................................... 16
VAN ZINDEREN BAKKER, E.M. Sr. 437
VENTER, A.M., *et al*.............................. 524
VERMEULEN, N.M.J., *et al.* 524, 566
VILJOEN, W.P., *et al*.............................. 132
VILLIERS, J.P. DE *See* DE VILLIERS, J.P. ....
VILLIERS, O.T. DE *See* DE VILLIERS, O.T............
Vitamin D, phosphorus and calcium contents on mineral and bone metabolism in baboons, Effects of varied dietary: a preliminary report 136
VOIGT, E.A.................................... 416
VON WECHMAR, M.B. *and* RYBICKI. E.P............ 488

W

WAGENAAR, A., *et al.* 136
WAGENER, P.C. 325
WALKER, A.R.P. 534
WALT, W.H. VAN DER *See* VAN DER WALT, W.H.....
WASSERMANN, W., *et al*............................ 39

Water pollution in a tropical climate, Inadequacy of *Escherichia coli* as an indicator: a preliminary study in Botswana 44
Water potential, Measurement of using thermocouple hygrometers 24
WATERS, D.J., *et al.* 379
WATLING, H.R. 134
WATTS, J.E. *and* DE VILLIERS, O.T. 428
WECHMAR, M.B. VON *See* VON WECHMAR, M.B. ....
WEHMEYER, A.S., *et al.* 426
Weller, Thomas 52
WESTHUIZEN, F.G.J. VAN DER *See* VAN DER WESTHUIZEN F.G.J. ....
Wheel on a rail, The motion of a 57
WHITE, T.D., *et al.* 445
Whitehall Formation of South Africa, A fossil cephalochordate from the early Permain 178
Wildlife management in South Africa in 1981 349
Willekeurige hoek, Oor die driedeling van 'n 440
WILLIS, J.P., *et al.* 379
Willow tree cuttings stored in the cold, Transport of labelled zeatin in 476
Wind, Estimating power from 126
WINTERBOTTOM, J.M. 500
WITHERS, P.C., *et al.* 566
Witwatersrand supergroup, Geochemical signature of shales from the 379
WOLMARANS, C.T. *and* VAN AARDT, W.J. 319
WOODS, D.R. 14
WRIGHT, P.G., *et al.* 139
WYK, C.B. VAN *See* VAN WYK, C.B. ....

X

X-ray photoelectron spectroscopy, Application of in applied research 441
X-ray photoelectron spectroscopy in fundamental research, Applications of 249

Y

Yawning and the thyroid gland 391
YOUNG, J.L. *and* DE KOCK, M.J. 371
Yunnan Province, South China, A new higher primate cranium from 106

Z

Zea mays L., A unifying view of vacuolar ontogeny from studies on the root cap of 120
Zeatin in willow tree cuttings stored in the cold, Transport of labelled 476
Zoogeographical affinities of estuarine fishes in south-east Africa 305